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| EXAMINER  |             |                      |                     |                  |
| BOYER, RANDY  |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 1797  |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/754,487

**Applicant(s)**

GATLIN, LARRY W.

**Examiner**

RANDY BOYER

**Art Unit**

1797

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-18,20-22 and 27-35 is/are rejected.
- 7) ☒ Claim(s) 2-6,19 and 23-26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. Examiner acknowledges Applicant's response filed 6 March 2008 containing amendments to the claims and remarks.
2. Claims 1-35 are pending.
3. The previous rejections of claims 1, 7-18, 20-22, and 27 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) are maintained.
4. New grounds for rejection of claims 1, 18, 28, and 31, necessitated by Applicant's amendment to the claims, are entered under 35 U.S.C. 112, second paragraph.
5. New grounds for rejection of claims 28-35, necessitated by Applicant's amendment to the claims, are entered under 35 U.S.C. 102(b) and 35 U.S.C. 103(a).
6. Finally, allowable subject matter is indicated with respect to claims 2-6, 19, and 23-26. The rejections follow.

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 1, 18, 28, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in Ex parte Wu, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by “such as” and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of Ex parte Steigewald, 131 USPQ 74 (Bd. App. 1961); Ex parte Hall, 83 USPQ 38 (Bd. App. 1948); and Ex parte Hasche, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 1, 18, 28, and 31 all recite the broad recitation “so that the resulting adducts comprise amines bonded to three different groups,” and the claims also recite “where two of the groups can be a part of a ring structure” (emphasis added) which is the narrower statement of the range/limitation.

***Claim Rejections - 35 USC § 102 / 35 USC § 103***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1797

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1, 7-18, 20-22, and 27-35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yon-Hin (EP 0882778 A2).

13. With respect to claims 1 and 18, Yon-Hin discloses contacting a fluid including noxious sulfur-containing species with an effective amount of a sulfur scavenging composition comprising substantially monomeric aldehyde-amine adducts formed from a reaction of a molar excess of an aldehyde or aldehyde donor and a secondary amine having at least one sterically bulk substituent where the resulting adduct comprises amines bonded to three different groups (see Yon-Hin, page 4, Example 1).

14. With respect to claim 19, Yon-Hin discloses the use of aldehyde and amine species to produce a sulfur scavenging composition (see Yon-Hin, page 4, Example 1; page 3, lines 12-58; and page 4, lines 1-8).

15. With respect to claims 7 and 27, Yon-Hin discloses wherein the composition comprises a solution including a quantity of adducts and the remainder a solvent (see Yon-Hin, page 4, Example 1).

16. With respect to claims 8-17, Yon-Hin discloses wherein the fluid is *any* hydrocarbon stream (see Yon-Hin, Abstract; page 2, lines 3-5; and page 4, lines 9-13).

17. With respect to claims 20-22, Yon-Hin discloses wherein the adding step may be continuous, intermittent, or periodic (see Yon-Hin, page 4, lines 13-16; and Example 4).

18. With respect to claims 28 and 29, Yon-Hin provides an inherent disclosure for contacting a sulfur scavenging composition *in a container*. Yon-Hin does not explicitly disclose use of a "container." Nevertheless, the person having ordinary skill in the art would recognize from Yon-Hin' disclosure that use of some sort of container is necessary to hold the sulfur-containing hydrocarbon to be treated by the sulfur scavenging composition. Likewise, the person having ordinary skill in the art would recognize that the sulfur scavenging composition could be added (or "contacted") with the hydrocarbon either prior to, after, or at the same time as adding the hydrocarbon to the "container."

19. With respect to claim 30, Yon-Hin discloses a sulfur scavenging composition comprising a solution including from about 5 wt.% to about 50 wt.% of the adducts, the remainder being a solvent (see Yon-Hin, page 4, lines 14-16).

20. With respect to claim 31, Yon-Hin discloses contacting a sulfur scavenging composition with a hydrocarbon containing hydrogen sulfide (see Yon-Hin, page 4, lines 9-16).

21. With respect to claims 32-34, Yon-Hin provides an inherent disclosure for introduction of a sulfur scavenging composition via a chemical tool, coiled tubing, or capillary coiled tubing (CCT). Yon-Hin does not provide an explicit disclosure for the means by which the sulfur scavenging composition is added to the sulfur-containing hydrocarbon to be treated. Nevertheless, the person having ordinary skill in the art

Art Unit: 1797

would recognize that any suitable means could be used, be it by pouring (i.e. "batch introducing step"), by pumping the composition through a pipe, or other "chemical tool," "coiled tubing," or "capillary coiled tubing (CCT)."

22. With respect to claim 35, Yon-Hin discloses a sulfur scavenging composition comprising a solution including from about 5 wt.% to about 50 wt.% of the adducts, the remainder being a solvent (see Yon-Hin, page 4, lines 14-16).

***Allowable Subject Matter***

23. Claims 2-6, 19, and 23-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is Examiner's statement of reasons for allowance:

With respect to claims 2-6, 19, and 23-26, Yon-Hin does not disclose or suggest a method of reducing or substantially eliminating a noxious sulfur-containing species in a fluid, the method comprising contacting the fluid with a composition comprising substantially monomeric aldehyde-amine adducts as defined by formulas (I) and (II) of Applicant's claims 2 and 19, "where the  $\text{CH}_2\text{R}$  groups are derived from at least one aldehyde" (see Applicant's claims 2 and 19). In contrast, the composition disclosed by Yon-Hin is an adduct containing terminal  $\text{CH}_2\text{R}$  groups derived from the *amine* reactant and thus not "derived from at least one *aldehyde*" as required by Applicant's claims 2 and 19 (from which claims 3-6 and 23-26 respectively depend). Thus, Applicant's claims 2-6, 19, and 23-26 are patentable over Yon-Hin.

***Response to Arguments***

25. Applicant's arguments filed 6 March 2008 have been fully considered but they are not persuasive.

26. Examiner understands Applicant's principal arguments to be:

- I. Yon-Hin does not disclose an aldehyde-amine adduct comprising a reaction of a single aldehyde and a single amine.
- II. Yon-Hin relates to compositions comprising two amines linked together by at least two aldehyde derived units.

27. With respect to Applicant's first argument, Yon-Hin very clearly discloses an aldehyde-amine adduct (for example, "1, $\omega$ -bis-[N,N-dibutylamino]-poly(methyleneoxy)-methylene") formed from the reaction of a single aldehyde (for example, "paraformaldehyde") and a single amine (for example, "dibutylamine") (see Yon-Hin, Example 1).

28. With respect to Applicant's second argument, such argument fails to comply with 37 CFR 1.111(b) because it amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

***Conclusion***

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Boyer whose telephone number is (571) 272-7113. The examiner can normally be reached Monday through Friday from 10:00 A.M. to 7:00 P.M. (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola, can be reached at (571) 272-1444. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 1797

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RPB

/Glenn A Caldarola/

Acting SPE of Art Unit 1797